STIC Search Report
EIC 3700

USPTO

STIC Database Tracking Number: 142088

TO: Chanda Harris
Location: RND 6a10
Art Unit: 3714
Wednesday, January 12, 2005

Case Serial Number: 10/726530

From: Emory Damron
Location: EIC 3700
Randolph 8-A-34
Phone: 571-272-3520

Emory.Damron@uspto.gov

Search Notes

Dear Chanda,

Please find below an inventor search in the bibliographic and full-text foreign patent files, as well as keyword searches in the patent and non-patent literature files, both bibliographic and full text.

References of potential pertinence have been tagged, but please review all the packets in case you like something I didn't.

Of those references which have been tagged, please note any manual highlighting which I've done within the document.

In addition to searching on Dialog, I also searched EPO/JPO/Derwent, Scirus/ScienceDirect, and Google Scholar.

There are a few decent references contained herein, but I'll let you determine how useful they may be to you.

Please contact me if I can refocus or expand any aspect of this case, and please take a moment to provide any feedback (on the form provided) so EIC 3700 may better serve your needs. Good Luck!

Sincerely,

Emory Damron

Technical Information Specialist

EIC 3700, US Patent & Trademark Office

Phone: (571) 272-3520/ Fax: (571) 273-0047

Emory.damron@uspto.gov

STIC Search Results
Feedback Form

EIC 3700

Questions about the scope or the results of the search? Contact *the EIC searcher or contact*:

John Sims, EIC 3700 Team Leader
571-272-3507 RND 8 B35

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* $\boxed{3714}$ *Example: 3730*

➤ *Relevant prior art **found**, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art **not found:***

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

```
Set     Items    Description
S1      135479   IR OR INFRARED
S2      941624   MEMORY OR RECALL OR LEARN? OR MENTAL? OR COGNITIV?
S3      1049394  EDUCAT? OR INSTRUCT? OR TEACH? OR DRILL? OR MOVEMENT?
S4      771996   ACTION? OR BEHAVIOR? OR BEHAVIOUR? OR MOTION? OR PERAMBULA-
                 T?
S5      2429097  MEASUR? OR TEST? OR EXPERIMENT? OR GAUG? OR RATE? OR RATIN-
                 G?
S6      739554   ASSESS? OR CALCULAT? OR OBSERV? OR WATCH? OR STUDY?
S7      2752783  DETECT? OR SENSE? OR SENSING? OR SENSOR? OR SENSER? OR MON-
                 ITOR?
S8      143636   ANIMAL OR ANIMALS
S9      66969    MOUSE OR MICE OR RAT OR RATS
S10     31821    LABRAT OR MAMMAL OR MAMMALS
S11     3        (NIGHT OR NOCTURNAL?)(3N)(CREATUR? OR BEAST?)
S12     1171796  S2:S11(5N)(METHOD? OR MODE? OR SYSTEM? OR PROCESS? OR PROC-
                 EDUR? OR TECHNIQU?)
S13     1380670  FOOD? OR FEED? OR MEAL? OR NUTRIENT? OR INGEST?
S14     2020622  APPETIT? OR DRINK? OR WATER? OR ALIMENT? OR NOURISHMENT?
S15     1247044  CPU OR COMPUTER? OR MICROCOMPUTER?
S16     907246   CONTROLLER? OR DATA()PROCESS? OR PROCESS?()UNIT? OR CENTRA-
                 L()PROCESS?
S17     1404098  HOLDER? OR BIN OR BINS OR CONTAINER? OR NOZZLE? OR HOPPER?
                 OR RECEPTACL?
S18     3284630  COVER? OR SHIELD? OR LID OR LIDS OR CAP OR CAPS OR TOP OR -
                 TOPS OR DOOR? OR OPENING? OR CLOSURE?
S19     3071164  POSITION? OR SITUATION? OR LOCATION? OR ORIENTATION?
S20     1896765  IC=(G06F? OR G01N? OR G01K? OR G09B? OR A01K? OR G01V?)
S21     66494    (S1 AND S2:S11) OR (S1 AND S12)
S22     2052     S21 AND S8:S11
S23     395      S22 AND S15:S16
S24     254      S23 AND S20
S25     395      S23:S24
S26     126      S25 AND S2:S4
S27     36       S25 AND S13:S14
S28     149      S26:S27
S29     78       S28 AND S17:S19
S30     149      S28:S29
S31     149      IDPAT (sorted in duplicate/non-duplicate order)
? show files
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200502
        (c) 2005  Thomson Derwent
File 347:JAPIO Nov 1976-2004/Aug(Updated 041203)
        (c) 2004 JPO & JAPIO
?
```

```
Set      Items    Description
S1       135479   IR OR INFRARED
S2       941624   MEMORY OR RECALL OR LEARN? OR MENTAL? OR COGNITIV?
S3       1049394  EDUCAT? OR INSTRUCT? OR TEACH? OR DRILL? OR MOVEMENT?
S4       771996   ACTION? OR BEHAVIOR? OR BEHAVIOUR? OR MOTION? OR PERAMBULA-
                     T?
S5       2429097  MEASUR? OR TEST? OR EXPERIMENT? OR GAUG? OR RATE? OR RATIN-
                     G?
S6       739554   ASSESS? OR CALCULAT? OR OBSERV? OR WATCH? OR STUDY?
S7       2752783  DETECT? OR SENSE? OR SENSING? OR SENSOR? OR SENSER? OR MON-
                     ITOR?
S8       143636   ANIMAL OR ANIMALS
S9       66969    MOUSE OR MICE OR RAT OR RATS
S10      31821    LABRAT OR MAMMAL OR MAMMALS
S11      3        (NIGHT OR NOCTURNAL?)(3N)(CREATUR? OR BEAST?)
S12      1171796  S2:S11(5N)(METHOD? OR MODE? OR SYSTEM? OR PROCESS? OR PROC-
                     EDUR? OR TECHNIQU?)
S13      1380670  FOOD? OR FEED? OR MEAL? OR NUTRIENT? OR INGEST?
S14      2020622  APPETIT? OR DRINK? OR WATER? OR ALIMENT? OR NOURISHMENT?
S15      1247044  CPU OR COMPUTER? OR MICROCOMPUTER?
S16      907246   CONTROLLER? OR DATA()PROCESS? OR PROCESS?()UNIT? OR CENTRA-
                     L()PROCESS?
S17      1404098  HOLDER? OR BIN OR BINS OR CONTAINER? OR NOZZLE? OR HOPPER?
                     OR RECEPTACL?
S18      3284630  COVER? OR SHIELD? OR LID OR LIDS OR CAP OR CAPS OR TOP OR -
                     TOPS OR DOOR? OR OPENING? OR CLOSURE?
S19      3071164  POSITION? OR SITUATION? OR LOCATION? OR ORIENTATION?
S20      1896765  IC=(G06F? OR G01N? OR G01K? OR G09B? OR A01K? OR G01V?)
S21      66494    (S1 AND S2:S11) OR (S1 AND S12)
S22      2052     S21 AND S8:S11
S23      395      S22 AND S15:S16
S24      254      S23 AND S20
S25      395      S23:S24
S26      126      S25 AND S2:S4
S27      36       S25 AND S13:S14
S28      149      S26:S27
S29      78       S28 AND S17:S19
S30      149      S28:S29
S31      149      IDPAT (sorted in duplicate/non-duplicate order)
S32      125      S25 NOT MOUSE?
S33      57       S32 NOT S30
S34      57       IDPAT (sorted in duplicate/non-duplicate order)
?
```

31/3,K/15   (Item 15 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

016444546   **Image available**
WPI Acc No: 2004-602462/200458
Related WPI Acc No: 2003-266074
XRPX Acc No: N04-476429
   Small animal **e.g.** mice , memory **and** learning **capability** measuring
     method , **involves finding number of accessing times of** animal **to**
   respective through holes on field enclosed by covers **placed between**
   field and feeder , **by** computer
Patent Assignee: KUROKAWA M (KURO-I)
Inventor: KUROKAWA M
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040142313	A1	20040722	US 200275247	A	20020215	200458	B
			US 2003726530	A	20031204		

Priority Applications (No Type Date): JP 2001154668 A 20010523
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040142313	A1		14	G09B-019/00	Div ex application US 200275247

   Small animal **e.g.** mice , memory **and** learning **capability** measuring
     method , involves finding number of accessing times of animal **to**
   respective through holes on field enclosed by covers **placed between**
   field and feeder , **by** computer

Abstract (Basic):
...   The **method** involves **measuring   position** of a small **animal**
   in an **observation** field by an **infrared** ray **detector** in a preset
   order each for a unit period, while a **computer** (200) controls
   opening of set of **covers** between the field and a rotary **feeder**
   storing **feed** . The number of accessing times of the **animal** to
   respective through holes formed on the field enclosed by the **covers** ,
   is got by the **computer** based on the **detector** output.
...   Used for **measuring** a **memory** and **learning** capability of a
   small **animal** (claimed) e.g. **rat** , and hippocampus damaged **mice** .
       ...

...The **computer** controls the supply of **feed** to the `small **animal** ,
   thereby avoiding **experimenter** 's contact to the small **animal** and
   hence reduces stress on the small **animal** to prevent dispersion
   (variations) in **experiment** results, depending on **experimenters** .
       ...
...The drawing shows a schematic construction illustrating a **measuring
   system** .
       ...

... **Water** supply unit (60...

...Rotary **feeder** (70...

... **Observation** unit (80...

... **Computer** (200
Title Terms: **ANIMAL** ;
International Patent Class (Main): **G09B-019/00**

31/3,K/16   (Item 16 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

016433979   **Image available**
WPI Acc No: 2004-591896/200457
Related WPI Acc No: 2002-527671; 2004-552523
XRAM Acc No: C04-215182
XRPX Acc No: N04-468109
  Video-based animal   behavior **analysis** system **for, e.g.** mouse **or**
  rat **, includes** computer **to determine** position **and shape of** animal
  from video images and characterize activity of animal **based on analysis
  of changes**
Patent Assignee: BAI X (BAIX-I); KOBLA V (KOBL-I); LIANG Y (LIAN-I); ZHANG
  Y (ZHAN-I)
Inventor: BAI X; KOBLA V; LIANG Y; ZHANG Y
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No   Kind   Date   Applicat No   Kind   Date   Week
US 20040141635 A1   20040722 US 2000718374   A   20001124 200457 B
                                US 2003698008   A   20031030

Priority Applications (No Type Date): US 2003698008 A 20031030; US
  2000718374 A 20001124
Patent Details:
Patent No   Kind Lan Pg   Main IPC   Filing Notes
US 20040141635 A1   23 G06K-009/00   CIP of application US 2000718374
                                      CIP of patent US 6678413

  Video-based animal   behavior **analysis** system **for, e.g.** mouse **or**
  rat **, includes** computer **to determine** position **and shape of** animal
  from video images and characterize activity of animal **based on analysis
  of changes**

Abstract (Basic):
...   A video-based **animal   behavior** analysis **system** comprises a
  computer configured to determine a **position** and shape of an **animal**
  from video images and characterize activity of the **animal** based on
  analysis of changes in the **position** and the shape over time.
...   An INDEPENDENT CLAIM is also included for method of determining
  and characterizing activity of an **animal** using **computer processing**
  of video images, comprising **detecting** an **animal** in the video
  images; tracking changes to the **animal** over a plurality of the video
  images; identifying and classifying the changes to the **animal** ; and
  characterizing the activity of the **animal** based on comparison to
  pre-trained models or rules of such activity or based on **calculation**
  of **behavioral** parameters of **behavioral processes** and **behavioral**
  events...

...The invention is used for determining and characterizing activity of an
  animal , e.g. **mouse** or **rat** (claimed...

...The invention is capable of automating the **measurements** of the
  experiments , provides the **measurements** of meaningful complex
  behaviors , reveals new parameters that characterize **animal**
  behaviors to meet post-genomic era's demands, and obtains consistent
  results...
Technology Focus:
...   INSTRUMENTATION AND **TESTING** - ...

...The system further comprises a video camera and a video digitization
   unit coupled to the **computer** for capturing the video images and
   converting the video images from analog to digital format. The **system**
   further comprises an **animal** identification, segregation, and tracking
   module receiving the video images. The **computer** further includes a
   behavior identification module for characterizing activity of the
   animal , the **behavior** identification module being coupled to the
   animal identification, segregation, and tracking module. The **computer**
    further includes a standard **animal** **behavior** storage module that
   stores information about known **behavior** of a predetermined standard
   animal for comparing the activity of the **animal** , the standard
   animal **behavior** storage module being coupled to the **behavior**
   identification module...

...Preferred **Method** : **Detecting** an **animal** includes using a background
   subtraction **method** comprising apply a adaptive or constant threshold
   on the difference values between a current image...

...of interest; post-process the various pixels in the region of interest
   to obtain the **animal** using various morphological and area refinement
   techniques ; and refine contours of the **animal** image by smoothing.
   Identifying and classifying changes to the **animal** includes using
   statistical shape information selected from the group consisting of
   area of the **animal** ; centroid **position** of the **animal** ; bounding box
   and its aspect ratio of the **animal** ; eccentricity of the **animal** ; and
   a directional **orientation** of the **animal** relative to an axis as
   generated with a principal component analysis. The steps are also...

...in night conditions by using red light to simulate such night
   conditions, or by using **infrared** cameras to capture the images with
   no light; with cages or arenas, each of which contains a single **animal**
   . Locating feature points and segments of the **animal** includes the
   detecting body parts of the **animal** , such as head, tail, waist, fore
   body, or hind body.
...Title Terms: **ANIMAL** ;

012787637   **Image available**
WPI Acc No: 1999-593864/199951
XRAM Acc No: C99-173612
XRPX Acc No: N99-438189
  Chemical reaction state evaluation of experimental   animal **such as
  sea-horse – involves evaluating shrinking state and reaction of**
  experimental   animal **based on** movement **of** animal   detected **by far**
  infrared   sensor
Patent Assignee: ZH ZANRYU NOYAKU KENKYUSHO (ZANR-N); ZANRYU NOYAKU
  KENKYUJO ZH (ZANR-N)
Number of Countries: 001 Number of Patents: 002
Patent Family:
Patent No   Kind Date   Applicat No   Kind Date   Week
JP 2969108   B1   19991102 JP 98220875   A   19980804 199951 B
JP 2000055906 A   20000225 JP 98220875   A   19980804 200021

Priority Applications (No Type Date): JP 98220875 A 19980804
Patent Details:
Patent No Kind Lan Pg   Main IPC   Filing Notes
JP 2969108   B1   11 G01N-033/15
JP 2000055906 A   12 G01N-033/15
  Chemical reaction state evaluation of experimental   animal **such as
  sea-horse...**

  ...involves evaluating shrinking state and reaction of experimental
  animal **based on** movement **of** animal   detected **by far** infrared
  sensor

  ...Abstract (Basic): NOVELTY – Electric shock is given to **experimental
  animal** , and conditioning stimulus and sound stimulus are **learnt**
  accordingly. Based on **movement** of **animal** **detected** by far
  infrared **sensors** (12a-12d), the shrinking state and reaction of
  animal is evaluated by presenting the conditioning stimulus. DETAILED
  DESCRIPTION – An INDEPENDENT CLAIM is also included...

  ...USE – For evaluating reaction state of **experimental** **animal** such as
  sea-horse to chemicals such as agrochemical or drug...

  ...ADVANTAGE – Improves visual **observation** accuracy, hence chemical
  reaction can be **detected** easily. DESCRIPTION OF DRAWING(S) – The
  figure shows model diagram of reaction state evaluation apparatus.
  Rectangular **container** (10); Buzzer (11); **Infrared** ray **sensors**
  (12a-12d); Speaker (13); White-noise generator (14); Illumination lamp
  (15); Mesh-like cylinder **container** ; Buzzer (21); **Infrared** ray
  sensors (22a-22d); Illumination lamp (23); Acryl board (25); Control
  apparatus (30); Personal **computer** (35...
  ...Title Terms: **EXPERIMENT** ;
International Patent Class (Main): **G01N-033/15**

011063741
WPI Acc No: 1997-041666/199704
XRPX Acc No: N97-034652
   Compound animal behaviour detection **and analysis** system **and**
   method - **by tracking** animal **body** movement **with** IR **and ultrasonic**
   sensing system
Patent Assignee: LII L (LIIL-I); YANG M (YANG-I); LI Y (LIYY-I); YOUNG M
   (YOUN-I)
Inventor: LIILAN-JYE ; YANG M; LI Y; YOUNG M
Number of Countries: 002 Number of Patents: 002
Patent Family:
Patent No	Kind	Date	Applicat No	Kind	Date	Week	
TW 285728	A	19960911	TW 95104005	A	19950424	199704	B
US 5915332	A	19990629	US 96709758	A	19960909	199932	N

Priority Applications (No Type Date): TW 95104005 A 19950424; US 96709758 A
   19960909
Patent Details:
Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
TW 285728	A			G06F-015/42	
US 5915332	A			A01K-029/00	
   Compound animal behaviour detection **and analysis** system **and**
   method - ...

...**by tracking** animal **body** movement **with** IR **and ultrasonic** sensing
   system

...Abstract (Basic): The system includes a **container** for supplying proper
   space for **detected** **animal** activity, which could be box or room. An
   IR array **detection** subsystem installs multiple **IR** emitters and
   receivers around **container** , which features that the **IR** array
   detection subsystem controls **IR** emitter and receiver by single chip
   microcomputer in order to **calculate** **animal** body central **position**
   coordinate on horizontal direction. An ultrasonic phase shift
   detection subsystem installs multiple ultrasonic emitters and
   receivers on .**container** **top** . A single chip **microcomputer** controls
   ultrasonic emitter and receiver in order to **calculate** **animal** body
   central **position** coordinate on vertical direction.
...Title Terms: **ANIMAL** ;
International Patent Class (Main): **A01K-029/00** ...

 ... **G06F-015/42**

007016175
WPI Acc No: 1987-016172/198703
XRPX Acc No: N87-012062
   Water -closet for pet dogs and cats - has automatic electronic control
   of reopening and closure of doorway shutter prior to cleansing of
   interior
Patent Assignee: LOCTIN A (LOCT-I)
Inventor: LOCTIN A
Number of Countries: 012 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 209474	A	19870121	EP 86420177	A	19860704	198703	B
FR 2584568	A	19870116				198708	
US 4729342	A	19880308	US 86885086	A	19860714	198813	

Priority Applications (No Type Date): FR 8511262 A 19850712
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 209474	A		F	16	

   Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE

US 4729342	A		9

   Water -closet for pet dogs and cats...

   ...has automatic electronic control of reopening and closure of doorway
   shutter prior to cleansing of interior

   ...Abstract (Basic): An enclosure is provided with a doorway (6) through
      which the animal may enter and leave while the shutter (7) is open.
      The side walls (4) are rinsed with water from a rotary sprinkler
      (11), while the bed (3) of the enclosure is washed by...

   ...An electronic unit (27) is connected to an infrared emitter (25) and
      detector (26) which face each other across a diagonal of the
      enclosure. The cleansing sequence is...

   ...after the shutter has been opened and closed for a second time to enable
      the animal to leave.
   ...Abstract (Equivalent): generally closed chamber having a floor and side
      walls, one of the latter having an opening through which the pet can
      pass. A door is displaceable on the housing between a closed
      position blocking the opening and an open position clear of same
      by means of a door drive motor. A closed- door switch on the housing
      generates an output only when the door is in its closed position .
      Floor and wall sprays respectively directed in the chamber at the floor
      and walls of the chamber are supplied with wash liquid, usually water
      , by a valve connectable to a source of presurised liquid. A drain in
      the floor...

   ...receive material washed by the sprays from the walls and floor,
      comminute the material, and feed it to the waste line...

   ...A sensor emits an output when the pet is within the chamber and a
      controller connected to the chopper, switch, sensor , motor, and
      valve closes the door and then opens the valve and operates the
      chopper when a pet has entered and...

...beam while in the chamber, and closes the valve, stops the chopper, and
     opens the **door** .
Title Terms: **WATER** ;
International Patent Class (Additional): **A01K-001/01** ...

... **A01K-029/00**

05914245   **Image available**
COMPULSORY SWIMMING **TESTING** APPARATUS FOR LABORATORY **ANIMAL**

PUB. NO.:   10-197345 [JP 10197345 A]
PUBLISHED: July 31, 1998 (19980731)
INVENTOR(s):   SUGIURA MINORU
APPLICANT(s): MUROMACHI KIKAI KK [000000] (A Japanese Company or
               Corporation), JP (Japan)
               SEIWA YAKUHIN KK [000000] (A Japanese Company or Corporation)
               , JP (Japan)
APPL. NO.:   09-032552 [JP 9732552]
FILED: January 10, 1997 (19970110)

COMPULSORY SWIMMING **TESTING** APPARATUS FOR LABORATORY **ANIMAL**

INTL CLASS: G01J-005/48; **G01K-003/00** ; G06M-001/00
...JAPIO CLASS: **Measurement**); 29.4 (PRECISION INSTRUMENTS

                              ABSTRACT
... simply by a method wherein a change in a temperature distribution
generated owing to the **movement** of a laboratory **animal** inside a **water**
 tank is **detected** by an **infrared** **sensor** and a change in an output
signal is counted...

...SOLUTION: One each of laboratory **animals** (**rats** , **mice** or the like)
whose momentum in the **water** is to be **measured** are put into **water**
 tanks 4. **Infrared - sensor** units 50 are held by unit bases 60 in such a
way that they are situated in respective central upper parts of the **water**
 tanks 4. Changes in a temperature distribution generated owing to the
movement of the laboratory **animals** inside the **water** tanks 4 are
detected by the **infrared - sensor** units 50, changes in output signals
generated at this time are counted by a personal **computer** 1 via an
interface 3, and the momentum of the laboratory **animals** is **measured** .
Fresnel multiple lenses whose visual fields **cover** the **water** tanks 4 and
which condense light are arranged in the **water** tanks 4. Thereby, the
akinesia of the laboratory **animals** is **measured** as a drop in their
voluntary momentum, and an antidepressant **action** can be evaluated
objectively.

```
Set     Items     Description
S1      720597    IR OR INFRARED
S2      2759417   MEMORY OR RECALL OR LEARN? OR MENTAL? OR COGNITIV? OR INTE-
                  LLIGEN?
S3      3222296   EDUCAT? OR INSTRUCT? OR TEACH? OR DRILL? OR MOVEMENT?
S4      4885672   ACTION? OR BEHAVIOR? OR BEHAVIOUR? OR MOTION? OR PERAMBULA-
                  T?
S5      12969396  MEASUR? OR TEST? OR EXPERIMENT?
S6      7903980   GAUG? OR RATE? OR RATING? OR CHARACTERIS? OR CHARACTERIZ?
S7      8483922   ASSESS? OR CALCULAT? OR OBSERV?
S8      16073491  WATCH? OR STUDY? OR ANALYZ? OR ANALYS? OR DETERMIN?
S9      2999319   DETECT? OR SENSE? OR SENSING?
S10     4968880   SENSOR? OR SENSER? OR MONITOR? OR EVALUAT?
S11     3001781   ANIMAL OR ANIMALS
S12     1661292   MICE OR RAT OR RATS
S13     1407865   LABRAT OR MAMMAL OR MAMMALS
S14     45        (NIGHT OR NOCTURNAL?)(3N)(CREATUR? OR BEAST?)
S15     9555601   S2:S14(5N)(METHOD? OR MODE? OR SYSTEM? OR PROCESS? OR PROC-
                  EDUR? OR TECHNIQU?)
S16     634252    (S1 AND S15) OR (S1 AND S2:S14)
S17     17388     S16 AND S11:S14
S18     3431      S17 AND S2:S4 AND S5:S10
S19     245       S18 AND (CPU OR COMPUTER? OR MICROCOMPUTER? OR CONTROLLER?
                  OR DATA()PROCESS? OR PROCESS?()UNIT? OR CENTRAL()PROCESS?)
S20     865       S18 AND (FOOD? OR FEED? OR MEAL? OR NUTRIENT? OR INGEST? OR
                  APPETIT? OR DRINK? OR WATER? OR ALIMENT? OR NOURISHMENT?)
S21     76        S19 AND S20
S22     66        RD (unique items)
? show files
File    1:ERIC 1966-2004/Jul 21
          (c) format only 2004 The Dialog Corporation
File    2:INSPEC 1969-2005/Dec W3
          (c) 2005 Institution of Electrical Engineers
File    6:NTIS 1964-2005/Jan W1
          (c) 2005 NTIS, Intl Cpyrght All Rights Res
File    7:Social SciSearch(R) 1972-2005/Jan W1
          (c) 2005 Inst for Sci Info
File    8:Ei Compendex(R) 1970-2005/Jan W1
          (c) 2005 Elsevier Eng.  Info. Inc.
File    11:PsycINFO(R) 1887-2005/Jan W1
          (c) 2005 Amer. Psychological Assn.
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  Title: A   computer -controlled maze environment for testing visual
memory in the rat
  Author(s): Gaffan, E.A.; Eacott, M.J.
  Author Affiliation: Dept. of Psychol., Reading Univ., UK

  Title: A   computer -controlled maze environment for testing visual
memory in the rat
  Abstract: A computer -controlled version of a Y-maze was developed to
allow automated testing of rats ' learning and memory with visual
stimuli. Each of the 3 arms terminated with 2 adjacent monochromatic
screens, 43...

... confined to the central part of the display). They could be stationary
or have oscillatory movement . Subjects' location in the maze was
 monitored by infrared beam photodetectors; approach to correct patterns
was rewarded with food . Pigmented rats of the Hooded Lister and Dark
Agouti strains were tested . All could acquire 2-pair concurrent visual
discriminations comprising 2 positive and 2 negative patterns, either
Scenes or Objects; most could acquire 4-pair discriminations. Dark Agouti
 rats generally performed better than Hooded Listers. A novel training
procedure using one positive and many negative patterns resulted in rapid
 learning of novel discriminations with either moving or non-moving
patterns. The apparatus is an effective environment for visual learning
 by rats , suitable for a wide range of tasks in neuropsychology and
psychopharmacology.
  ...Descriptors: computerised instrumentation
  Identifiers: computer -controlled maze environment...

... rat visual memory   testing ; ...

... computer -controlled Y-maze...

...automated testing ; ...

... learning ; ...
...oscillatory movement ; ...

... infrared beam photodetectors...

... food rewards...

...Hooded Lister rats ; ...

...Dark Agouti rats ;

02678384   Genuine Article#: PP755   No. References: 40
**Title: PLACE NAVIGATION IN THE MORRIS WATER MAZE UNDER MINIMUM AND
    REDUNDANT EXTRA-MAZE CUE CONDITIONS**
Author(s): FENTON AA; AROLFO MP; NERAD L; BURES J

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    PHARMACOL/CORDOBA//ARGENTINA/

(Abstract Available)

Abstract: Complex relational **processes** underlying place navigation
    learning were **analyzed** by minimizing the relational elements
    available to **rats** . The **animals** navigated in a standard **water** maze
    in darkness using controlled remote visual cues (back-lit shapes in
    opaque buckets aimed at the pool to keep the background dark) while
    being tracked by an **infrared** camera and **computer** . **Learning** was
    similar with 2 (AB) or 4 (ABCD) cues and as good as in a...
...lit room with many cues (asymptotic escape time t = 5-7 s). The
    ABCD-trained **rats** were not impaired by removal of any 2 cues (t = 7).
    For AB-trained **rats** , adding 2 new cues (ABEF): or replacing AB with
    EF (EF) caused small (t = 11...

...t = 20), respectively. By block 2, both groups (ABEF, EF) returned to
    asymptotic performance. But **testing** the ABEF **rats** on block 2 with
    only EF indicated that EF was **learned** (t = 12) but not as well as
    when only EF was present (t = 5). Thus...
...Identifiers--FREELY MOVING **RAT** ; HIPPOCAMPUS; **MEMORY;** BLOCKING;
    CELLS; REPRESENTATION; INFORMATION; STIMULUS; UNITS

0001815383   2001-18762-006
The ethovision video tracking system --**a tool for** behavioral **phenotyping of transgenic** mice

AUTHOR: Spink, A. J.; Tegelenbosch, R. A. J.; Buma, M. O. S.; Noldus, L. P.
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  Netherlands

ABSTRACT: Video tracking **systems** enable **behavior** to be studied in a
  reliable and consistent way, and over longer time periods than if they
  are manually recorded. **Calculations** are performed on a series of frames
  to derive a set of quantitative descriptors of the **animal 's movement** .
  EthoVision is a specific example of such a system, and its functionality
  that is particularly relevant to transgenic **mice** studies is described.
  Key practical aspects of using the EthoVision system are outlined. Four
  case...

...The effects of disabling the Munc 18-1 gene were clearly shown using the
  straightforward **measure** of how long the **mice** took to a zone in an
  open field. (2) Differences in exploratory **behavior** between short and
  long attack latency **mice** strains were quantified by **measuring** the
  time spent in inner and outer zones of an open field. (3) **Mice** with
  hypomorphic CREB alleles were shown to perform less a **water** maze, but
  this was only clear when a range of different variables were **calculated**
  from their tracks. (4) **Mice** with the trkB receptor knocked out in the
  forebrain also performed poorly in a **water** maze, and it was immediately
  apparent from examining plots of the that this was due...

DESCRIPTORS: ***Anima l Locomotion**...

... **Behavioral** Genetics; **Computer** Applications...

... **Mice**
...IDENTIFIERS: **behavioral** phenotyping...

...transgenic **mice** ; ...

...automated **observation** ; ...

... **water** maze...

... **animal   movements**

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0001771306   2001-00621-002
Validation of a new system **for the automatic registration of** behavior
in mice **and** rats

AUTHOR: Van de Weerd, H. A.; Bulthuis, R. J. A.; Bergman, A. F.;
   Schlingmann, F.; Tolboom, J.; Van Loo, P. L. P.; Remie, R.; Baumans, V.;
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ABSTRACT: Describes the validation **process** of Laboratory **Behaviour**
   Observation , Registration, and **Analysis** **System** (LABORAS) by
   comparing the results of the **behavioral** **analysis** from the
   computerized device (LABORAS) with the visual scorings of 3 human O's in
   order to **assess** the degree of concordance. A large data set of 24-hr
   behavior recordings were collected on 2 **mice** and 2 **rats** in order to
   establish the reliability of the system. Results indicate that LABORAS is
   a reliable system for the automated registration of eating, **drinking** ,
   grooming, climbing, resting, and locomotion of **mice** during a prolonged
   period of time. In **rats** , locomotion and resting also met the
   pre-defined validation criteria. It is concluded that the **system** can
   reduce **observation** labor and time considerably. (PsycINFO Database
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DESCRIPTORS: ***Behavio** r **Analysis** ; * ...

...Measurement; *
IDENTIFIERS: validity & reliability of Laboratory **Behavior** **Observation**
   Registration **Analysis** **System** vs human **behavioral** **analysis**

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0001621064   1997-05976-002
Continuous recording of uneaten food **pellets and demand-** feeding
   activity: A new approach to studying   feeding **rhythms in fish**
AUTHOR: Madrid, J. A.; Azzaydi, M.; Zamora, S.; Sanchez-Vazquez, F. J.
AUTHOR AFFILIATION: U Murcia, Faculty of Biology, Dept of Physiology &
   Pharmacology--Murcia--Spain
JOURNAL: Physiology & Behavior--
http://www.elsevier.com/inca/publications/store/5/2/5/4/8/7/, Vol 62(4),
689-695, Oct, 1997
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Continuous recording of uneaten food **pellets and demand-** feeding
   activity: A new approach to studying   feeding **rhythms in fish**

ABSTRACT: The existence of **feeding** rhythms implies that fish would **feed**
   better during their preferred **feeding** phase but reject **food** at any
   other time. This **study** **tested** the performance of a device for
   continuously collecting and **detecting** uneaten **food** pellets. The
   device consists of a pellet collector placed just under the **feeder** , and
   a decanter with a **sensor** attached to the bottom. When a **food** pellet
   is not eaten, it is rapidly collected and transferred to the decanter,
   where it is **detected** while dropping by an **infrared** **sensor** . 5 groups
   of 15 sea bass were maintained under natural conditions and subjected to
   a daily **feeding** cycle consisting of 3 1-hr **meals** . "Natural" demand-
   feeding rhythms were also investigated in 5 groups of sea bass
   maintained under an ad lib self- **feeding** regime. When submitted to the
   3- **meal** **feeding** cycle, Ss fed mostly during the morning and afternoon,
   rejecting **food** at night. Consequently, the profile of uneaten pellets
   peaked at night but remained very low during daytime. This diurnal
   preference for **feeding** is consistent with the almost strict diurnal
   feeding rhythm found in Ss under ad-lib **feeding** . These results reveal
   the utility of this device for estimating **food** utilization and its
   potential application in nutritional and chronobiological studies in
   fish. (PsycINFO Database Record...

DESCRIPTORS: ***Anima** l Circadian Rhythms...

... **Animal** **Feeding** **Behavior** ; *...

... **Food** Intake; **Computer** Applications...
IDENTIFIERS: device for **detecting** & collecting uneaten **food** pellets
   &/vs **sensor** **monitoring** of demand- **feeding** activity, continuous
   recording of **feeding** rhythms, sea bass

Absence of snapshot memory **of the target view interferes with place**
  navigation learning **by** rats **in the** water **maze**
AUTHOR: Arolfo, Maria Pia; Nerad, Ludek; Schenk, Francoise; Bures, Jan
AUTHOR AFFILIATION: National U of Cordoba, Faculty of Chemical Sciences,
  Dept of Pharmacology--Argentina

ABSTRACT: Contribution of visual and nonvisual mechanisms to spatial
  behavior of **rats** in the Morris **water** maze was studied with a
  computerized   infrared tracking system, which switched off the room
  lights when the S entered the inner circular area of the pool with an
  escape platform. 10 naive male **rats** trained under light-dark (LD)
  conditions found the escape platform more slowly than 10 male **rats**
  trained in permanent light (LT). After group members were swapped, the
  LT-pretrained **rats** found under LD conditions the same target faster and
  eventually approached latencies attained during LT navigation.
  Performance of LD-trained **rats** deteriorated in permanent darkness (PD)
  but improved with continued PD training. Thus LD navigation improves
  gradually by **procedural   learning** (extrapolation of the start-target
  azimuth into the zero-visibility zone) but remains impaired by lack of
  immediate visual **feedback** rather than by absence of the snapshot
  memory of the target view. (PsycINFO Database Record (c) 2004 APA, all
  rights reserved)

...DESCRIPTORS: Maze **Learning** ; *...

...Spatial **Learning** ; **Rats**
IDENTIFIERS: training under light &/vs dark conditions, **water** maze
  performance in darkness, **rats** , implications for role of vision in
  navigation **learning**

CITED REFERENCES:
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Title: Use of computer **supported** evaluation **in applied** animal
    ethology by OBSERVER **video tape** analysis   system

Abstract: **Computer** supported **behavioural   evaluation** with the help of
    OBSERVER /video tape **analysis   system** enables an effective and
    reproducible statistical **analysis** of **behavioural** data recorded on
    video tapes. It allows the computation of **behavioural   observations**
    in combination with **infrared** videos over a continuous 24 hour period
    or using a time sampling method. The structure and functions together
    with examples of the use of the video tape **analysis   system** in pigs
    and rabbits are described. This **method** supports the **assessment** of
    management and **feeding   systems** for the welfare and protection of
    animals .

02206233   Genuine Article#: KK092   No. References: 17
Title: 2-DIMENSIONAL ANALYSIS **OF VOLUNTARY LOCOMOTOR-ACTIVITY IN** RATS —
   COMPACT APPARATUS AND ITS APPLICATION FROM NUTRITIONAL ASPECTS
Author(s): IWAMI K; SUGIYAMA K; YAMAMOTO Y; IBUKI F
Corporate Source: KYOTO PREFECTURAL UNIV,DEPT AGR CHEM,FOOD & NUTR SCI
   LAB,SAKYO KU/KYOTO 606//JAPAN/
Journal: BIOSCIENCE BIOTECHNOLOGY AND BIOCHEMISTRY, 1993, V57, N1 (JAN), P
   73-78
ISSN: 0916-8451
Language: ENGLISH   Document Type: ARTICLE   (Abstract Available)

Title: 2-DIMENSIONAL ANALYSIS **OF VOLUNTARY LOCOMOTOR-ACTIVITY IN** RATS —
   COMPACT APPARATUS AND ITS APPLICATION FROM NUTRITIONAL ASPECTS
Abstract: A convenient apparatus for **measuring** the locomotor activity of
   caged **rats** was produced from thin metallic chest, video camera,
   personal **computers** , fluorescent lamp, **infrared** lamp, etc. at a cost
   not exceeding 200,000 yen. This apparatus was large enough for a
   growing **rat** to move about at will, whose location and locomotion were
   memorized at intervals of a second with the connected personal
   computer . For this reason, the apparatus is more suitable for
   monitoring 'voluntary' or 'spontaneous' activity than a running wheel
   or so-called 'Animex' apparatus. The **behavior** of **rats** under
   nutritionally different conditions, as well as those accustomed to
   meal – **feeding** either with high-protein and protein-free diets or with
   diets containing 10% perilla or safflower oil, was successively
   measured . As a result, it was assumed that the relative locomotor
   activity would be affected by...

...than by the preference for a particular diet and that the time to search
   for **food** would not necessarily be shortened by **ingesting** perilla
   oil.
Research Fronts: 91-3219 001   (DOCOSAHEXAENOIC ACID; ROD OUTER SEGMENTS OF
   RAT RETINA; CONE PHOTORECEPTOR CELLS; BRAIN LIPIDS; **FEEDING** DIETARY
   FISH OIL)

0007083432   CAB Accession Number: 19950505936
   A device for monitoring   feeding **activity of cockroaches.**
   Wu ShengMing; Dong GuiFan; Dong YanDe
   Institute of Microbiology and Epidemiology, 23 (A) Qilizhuang Road, Fengtai, Beijing 100071, China.
   Zhongguo Meijieshengwuxue ji Kongzhi Zazhi = Chinese Journal of Vector Biology and Control vol. 2 (3, Supplement): p.65-68
   Publication Year: 1991
   Language: Chinese Summary Language: English Record Type: Abstract
   Document Type: Journal article

   A device for monitoring   feeding **activity of cockroaches.**
   In order to **observe feeding** activity of cockroaches, a new device was developed. The device receives information with **infrared sensors** . The information is input into the single board **computer** . It is stored and **calculated** in the **computer** . Accumulated time and frequency of **food** -searching **behaviour** are printed regularly in a fixed format.

   ...DESCRIPTORS: **feeding behaviour** ; ...
... **computers** ; ...

... **monitoring** ; ...

... **feeding**
   ...BROADER TERMS: **animals**

0005497972   CAB Accession Number: 19842422347
    Feeding   behaviour **in confinement sheep production.**
    B<o>e, K.; Gjestang, K. E.
    Dep. of Bldg Technol. in Agric., Agric. Univ. of Norway, N-1432 As-NLH,
Norway.
    Rapport, Institutt for Bygningsteknikk, Norway
    (Nr. 199): 17 pp
    Publication Year: 1984
    Language: English   Summary Language: Norwegian   Record Type:
Abstract
    Document Type: Miscellaneous

    Feeding   behaviour **in confinement sheep production.**
    Feeding   behaviour of a flock of 160 sheep was studied in 2 types of
housing   during   the   winter   of 1981/82 and 1982/83. Eating, standing and
lying   patterns   were   recorded   using   **infrared** light cameras and video
time-lapse   recorders. Data obtained were **analysed** statistically on
    computer . **Feed** rations consisted of concentrates, hay and silage. The
first type of barn was fully insulated...

... pits for manure storage; both types had slatted floors and there were 7
or 8 **animals** per pen.

    ...DESCRIPTORS: **feeding** ; ...

... **animal   behaviour**
    CABICODES: **Animal   Behaviour** (LL300)

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Set     Items   Description
S1      162458  IR OR INFRARED
S2      754959  MEMORY OR RECALL OR LEARN? OR MENTAL? OR COGNITIV? OR INTE-
                LLIGEN?
S3      812581  EDUCAT? OR INSTRUCT? OR TEACH? OR DRILL? OR MOVEMENT?
S4      2164622 ACTION? OR BEHAVIOR? OR BEHAVIOUR? OR MOTION? OR PERAMBULA-
                T?
S5      7404053 MEASUR? OR TEST? OR EXPERIMENT?
S6      3207546 GAUG? OR RATE? OR RATING? OR CHARACTERIS? OR CHARACTERIZ?
S7      3019054 ASSESS? OR CALCULAT? OR OBSERV?
S8      8320897 WATCH? OR STUDY? OR ANALYZ? OR ANALYS? OR DETERMIN?
S9      1296583 DETECT? OR SENSE? OR SENSING?
S10     2199377 SENSOR? OR SENSER? OR MONITOR? OR EVALUAT?
S11     2755110 ANIMAL OR ANIMALS
S12     1351865 MICE OR RAT OR RATS
S13     66400   LABRAT OR MAMMAL OR MAMMALS
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                EDUR? OR TECHNIQU?)
S16     145834  (S1 AND S15) OR (S1 AND S2:S14)
S17     20358   S16 AND S11:S14
S18     3425    S17 AND S2:S4 AND S5:S10
S19     138     S18 AND (CPU OR COMPUTER? OR MICROCOMPUTER? OR CONTROLLER?
                OR DATA()PROCESS? OR PROCESS?()UNIT? OR CENTRAL()PROCESS?)
S20     444     S18 AND (FOOD? OR FEED? OR MEAL? OR NUTRIENT? OR INGEST? OR
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Assessing **spatial vision - Automated** measurement **of the contrast-sensitivity function in the hooded** rat

Keller J.; Strasburger H.; Cerutti D.T.; Sabel B.A.
B.A. Sabel, Institute Medical Psychology, Otto-von-Guericke University, Leipziger Strasse 44, D-39120 Magdeburg Germany
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...description of an organism's spatial vision; it is widely used to describe vision in **animals** and humans, to track developmental changes in vision, and to compare vision among different species. Despite the predominance of **rats** in neuroscience research, their vision is not thoroughly studied due to the complexity of psychophysical **measurement** and a generally held notion that **rat** vision is poor. We therefore designed an economical and rapid **method** to **assess** the hooded **rat** 's CSF, using a **computer** **monitor** to display stimuli and an **infrared** touch screen to record responses. A six-alternative forced-choice task presented trials in which...

...with five gray stimuli (S-). Nose pokes to the S+ but not the S- produced **water** reinforcers. Contrasts were **tested** at each spatial frequency with a simple adaptive **procedure** until stimulus **detection** fell below chance. Psychometric functions were obtained by maximum-likelihood fitting of a logistic function...

...obtaining the threshold as the function's point of inflection. As in previous studies with **rats** , CSFs showed an inverse-U shape with peak sensitivity at 0.12 cyc/deg and acuity just under 1 cyc/deg. The results indicate the present **computer** -controlled ·**behavioral** **testing** device is a precise and efficient instrument to **assess** spatial visual function in **rats** . Copyright (C) 2000 Elsevier Science B.V.
MEDICAL DESCRIPTORS:
 technique ; accuracy; **computer** **analysis** ; training; reinforcement; statistical **model** ; nonhuman; male; **rat** ; **animal experiment** ; **article^pr** ; priority journal

  Continuous recording of uneaten food **pellets and Demand-** Feeding
activity: A new approach to studying   feeding **rhythms in fish**
   Madrid J.A.; Azzaydi M.; Zamora S.; Sanchez-Vazquez F.J.
   F.J. Sanchez-Vazquez, Department Physiology/Pharmacology, Faculty of
   Biology, University Murcia, 30100 Murcia Spain

   The existence of **feeding** rhythms implies that fish would **feed** better
during their preferred **feeding** phase but reject **food** at any other time.
In the present paper, we **tested** the performance of a new device for
continuously collecting and **detecting** uneaten **food** pellets. The device
is basically made of two parts: a pellet collector placed just under the
feeder and a decanter-with a **sensor** attached to the bottom. When a **food**
 pellet was not eaten, it was rapidly collected and transferred to the
decanter, where it was **detected** while dropping by an **infrared** **sensor**
coupled to a **microcomputer** . To validate this system, five groups of
fifteen sea bass, Dicentrachus labrax L., were maintained under natural
conditions and subjected to a daily **feeding** cycle (**feeding** **rate** =
2.5% of body weight) consisting of three **meals** of one hour duration each
(0800-0900 h, 1600-1700 h and 2400-0100 h). Uneaten pellets together with
demand- **feeding** activity were simultaneously recorded. In addition to
these **test** tanks, 'natural' demand- **feeding** rhythms were also
investigated in five groups of sea bass maintained under an ad lib self-
feeding regime. In the **test** tanks, when submitted to the three **meal**
feeding cycle, sea bass showed clear time preferences for **feeding** , since
they fed mostly during the morning and afternoon, rejecting **food** at
night. Consequently, the profile of uneaten pellets peaked at night but
remained very low during daytime. This diurnal preference for **feeding** is
consistent with the almost strict diurnal **feeding** rhythm found in the sea
bass groups under ad lib self- **feeding** . These results revealed the
usefulness of this device in estimating **food** utilization and its
potential application in nutritional and chronobiological studies in fish.

05947903   EMBASE No: 1994360597
  Place navigation in the morris water **maze under minimum and redundant extra-maze cue conditions**

  Fenton A.A.; Arolfo M.P.; Nerad L.; Bures J.
  Institute of Physiology, Academy of Sciences, Videnska 1083,14220 Prague
  4 Czech Republic

  Place navigation in the morris water **maze under minimum and redundant extra-maze cue conditions**

  Complex relational **processes** underlying place navigation **learning**
were **analyzed** by minimizing the relational elements available to **rats** .
The **animals** navigated in a standard **water** maze in darkness using
controlled remote visual cues (back-lit shapes in opaque buckets aimed at
the pool to keep the background dark) while being tracked by an **infrared**
camera and **computer** . **Learning** was similar with 2 (AB) or 4 (ABCD) cues
and as good as in a...

...lit room with many cues (asymptotic escape time t = 5-7 s). The
ABCD-trained **rats** were not impaired by removal of any 2 cues (t = 7). For
AB-trained **rats** , adding 2 new cues (ABEF) or replacing AB with EF (EF)
caused small (t = 11...

...t = 20), respectively. By block 2, both groups (ABEF, EF) returned to
asymptotic performance. But **testing** the ABEF **rats** on block 2 with only
EF indicated that EF was **learned** (t = 12) but not as well as when only EF
was present (t = 5). Thus...
MEDICAL DESCRIPTORS:
* **learning**
 animal **behavior** ; **animal** **experiment** ; article; association; **computer**
  system ; darkness; male; maze **test** ; nonhuman; **rat** ; spatial
discrimination; task performance; television camera

Absence of snapshot memory **of the target view interferes with place
navigation** learning **by** rats **in the** water **maze**
    Arolfo M.P.; Nerad L.; Schenk F.; Bures J.
    Institute of Physiology, Academy of Sci. of Czech Republic, Videnska
    1083,14220 Prague 4-Krc Czech Republic

    Contribution of visual and nonvisual mechanisms to spatial **behavior** of
rats in the Morris **water** maze was studied with a **computerized
infrared** tracking system, which switched off the room lights when the
subject entered the inner circular area of the pool with an escape
platform. Naive **rats** trained under light-dark conditions (L-D) found the
escape platform more slowly than **rats** trained in permanent light (L).
After group members were swapped, the L-pretrained **rats** found under L-D
conditions the same target faster and eventually approached latencies
attained during L navigation. Performance of L-D-trained **rats**
deteriorated in permanent darkness (D) but improved with continued D
training. Thus L-D navigation improves gradually by **procedural   learning**
(extrapolation of the start-target azimuth into the zero- visibility zone)
but remains impaired by lack of immediate visual **feedback** rather than by
absence of the snapshot **memory** of the target view.
MEDICAL DESCRIPTORS:
* **learning** ; *light dark cycle; *maze **test** ; *spatial **memory**
 animal   experiment ; article; auditory stimulation; cognition; controlled
 study ; escape **behavior** ; male; nonhuman; **rat** ; task performance; visual
stimulation

05781500   JICST ACCESSION NUMBER: 04A0449285 FILE SEGMENT: PreJICST-E
 Monitoring **the** behavior **and multi-dimensional** movements **of Weddell
    seals using an** animal -borne video and data recorder
DAVIS R W (1); HORNING M (1); HAGEY W (2)
(1) Texas A & M Univ. At Galveston, Tx, Usa; (2) Pisces Design, Ca, Usa
Mem Natl Inst Polar Res Spec Issue, 2004, NO.58, PAGE.148-154
JOURNAL NUMBER: Y0563AAO   ISSN NO: 0386-0744
LANGUAGE: English   COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
MEDIA TYPE: Printed Publication

 Monitoring **the** behavior **and multi-dimensional** movements **of Weddell
    seals using an** animal -borne video and data recorder
ABSTRACT: We have developed an **animal** -borne video and data recorder to
    observe Weddell seals foraging and to reconstruct their
    three-dimensional **movements** . The video and data recorder consists of
    a low-light-sensitive video camera with near- **infrared** light-emitting
    diodes that is mounted on top of the seal's head to obtain close-up
    images of the seal's muzzle and the area in front of the **animal** . The
    main housing, which is mounted on the **animal** 's back, contains an 8-mm
    video tape recorder that can record for 6h, batteries, a **microcomputer**
     and transducers for pressure, **water** speed, compass bearing, and
    flipper stroke frequency. Sound is recorded on one audio channel of...

...swimming performance data from 31 adult Weddell seals. We have
    documented seals foraging in the **water** column, on the sea floor, and
    at the under-ice surface. Mid- **water** foraging included encounters with
    large Antarctic tooth-fish and smaller Antarctic silverfish.
    Multivariate statistical **analysis** of variables derived from the
    temporal and spatial **characteristics** of three-dimensional dive paths
    have enabled us to classify dive types and, in some...

03122979   JICST ACCESSION NUMBER: 97A0434791 FILE SEGMENT: JICST-E
The application of the measuring **apparatus of locomotor activity by**
    infrared   sensor   system **using multi-Fresnel lenses to forced**
    swimming test .
SUGIURA MINORU (1); MURAOKA SHIN'ICHIRO (1); YOSHIZAWA TOYOKICHI (1);
    WATABE KANAME (2); MURAKAMI OSAMU (2); YAMAGUCHI FUMIO (2)
(1) Seiwayakuhin; (2) Muromachikiki
Shinkei Seishin Yakuri(Japanese Journal of Neuropsychopharmacology), 1997,
    VOL.19,NO.4, PAGE.287-291, FIG.4, REF.11
JOURNAL NUMBER: Z0794BAO   ISSN NO: 0388-7588   CODEN: SSYAD
UNIVERSAL DECIMAL CLASSIFICATION: 615.214
LANGUAGE: Japanese   COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

The application of the measuring **apparatus of locomotor activity by**
    infrared   sensor   system **using multi-Fresnel lenses to forced**
    swimming test .

ABSTRACT: Recently, a new **method** was introduced for the **measurement** of
    locomotor activity in **experimental**   **animals** by an **infrared**   **sensor**
     system using a multi-Fresnel lenses (SUPERMEX : Muromachi-kikai,
    Tokyo). In this **study** , the application of this **sensor** **system** to a
    forced swimming **test** was investigated. **Mice** were forced to swim 5
    minutes daily for four consecutive days. The locomotor activity of
    mice in the **water** was significantly decreased on the second day and
    this decrease was most remarkable on the...

...imipramine (20 mg/kg) or mianserin(5,10 mg/kg). These findings suggest
    that an **infrared**   **sensor**   **system** using a multi-Fresnel lenses may
    be applicable to forced swimming **test** for the simple and quantitative
     evaluation of antidepressant drugs in multi-channel compared to
    previous system. (author abst.)
DESCRIPTORS: mouse(**animal**); ...

... **animal**   **test** ; ...

... **behavioral** pharmacology...

...optical **sensor** ; ...

...spontaneous **behavior** ; ...
...data **analysis** ; ...

...personal **computer** ;
...BROADER DESCRIPTORS: **animal** ; ...

... **experiment** ; ...

...pharmacological **action** ; ...

... **action** and effect...

... **sensor** ; ...

... motion ; ...

... analysis ; ...

...digital computer ; ...

... computer ;

01342496   JICST ACCESSION NUMBER: 91A0526303   FILE SEGMENT: JICST-E
Automatic monitoring   system **for the** measurement **of body weight,** food
    and water **consumption and spontaneous activity of a mouse.**
MINEMATSU S (1); HIRUTA M (1); TAKI M (1); FUJII Y (1); ABURADA M (1)
(1) TSUMURA & CO., Ibaraki, JPN
J Toxicol Sci, 1991, VOL.16,NO.2, PAGE.61-73, FIG.10, REF.8
JOURNAL NUMBER: Z0265BAD   ISSN NO: 0388-1350
UNIVERSAL DECIMAL CLASSIFICATION: 57.082
LANGUAGE: English   COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

Automatic monitoring   system **for the** measurement **of body weight,** food
    and water **consumption and spontaneous activity of a mouse.**
ABSTRACT: The simultaneous recording system for body weight, **food** and
    water consumption and **behavior** (spontaneous motor activity and
    drinking and **feeding** **behavior**) of a mouse was developed. The body
    weight and **food** consumption were **measured** by force transducers.
    Food and **water** consumption and **drinking** and **feeding** **behavior**
    were **measured** by an **infrared** luminous diode and a phototransistor.
    Spontaneous motor activity was **measured** by photosensors. The **system**
    control and data acqusition were performed by using a personal
    computer . Every parameter could be **monitored** with a desired time
    interval. All the data collected by this system revealed apparent
    circadian...
DESCRIPTORS: mouse(**animal**); ...

... **feeding** (**food** intake...

... **water** intake(organism...

...spontaneous **behavior** ; ...

...simultaneous **measurement** ;
...BROADER DESCRIPTORS: **animal** ; ...

... **measurement** ; ...

... **animal** **behavior** ; ...

... **motion**

```
Set      Items   Description
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S2      1100400  MEMORY OR RECALL OR LEARN? OR MENTAL? OR COGNITIV? OR INTE-
                 LLIGEN?
S3      1518168  EDUCAT? OR INSTRUCT? OR TEACH? OR DRILL? OR MOVEMENT?
S4      2586870  ACTION? OR BEHAVIOR? OR BEHAVIOUR? OR MOTION? OR PERAMBULA-
                 T?
S5      7814808  MEASUR? OR TEST? OR EXPERIMENT?
S6      4173832  GAUG? OR RATE? OR RATING? OR CHARACTERIS? OR CHARACTERIZ?
S7      4613747  ASSESS? OR CALCULAT? OR OBSERV?
S8     12797668  WATCH? OR STUDY? OR ANALYZ? OR ANALYS? OR DETERMIN?
S9      1798651  DETECT? OR SENSE? OR SENSING?
S10     3004850  SENSOR? OR SENSER? OR MONITOR? OR EVALUAT?
S11     4599971  ANIMAL OR ANIMALS
S12     3050705  MICE OR RAT OR RATS
S13       77090  LABRAT OR MAMMAL OR MAMMALS
S14           7  (NIGHT OR NOCTURNAL?)(3N)(CREATUR? OR BEAST?)
S15     5283366  S2:S14(5N)(METHOD? OR MODE? OR SYSTEM? OR PROCESS? OR PROC-
                 EDUR? OR TECHNIQU?)
S16      351010  (S1 AND S15) OR (S1 AND S2:S14)
S17       83648  S16 AND S11:S14
S18       13813  S17 AND S2:S4 AND S5:S10
S19         466  S18 AND (CPU OR COMPUTER? OR MICROCOMPUTER? OR CONTROLLER?
                 OR DATA()PROCESS? OR PROCESS?()UNIT? OR CENTRAL()PROCESS?)
S20        1656  S18 AND (FOOD? OR FEED? OR MEAL? OR NUTRIENT? OR INGEST? OR
                 APPETIT? OR DRINK? OR WATER? OR ALIMENT? OR NOURISHMENT?)
S21          76  S19 AND S20
S22          71  RD (unique items)
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File 121:Brit.Education Index 1976-2004/Q3
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File 144:Pascal 1973-2004/Dec W1
         (c) 2004 INIST/CNRS
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         (c) format only 2005 The Dialog Corp.
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File 437:Education Abstracts 1983-2004/Nov
         (c) 2004 The HW Wilson Co
?
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12329534   PASCAL No.: 95-0569001
A computer **-controlled maze environment for** testing **visual** memory **in the** rat
GAFFAN E A; EACOTT M J
Univ. Reading, dep. psychology, Reading RG6 2AL, United Kingdom
Journal: Journal of neuroscience methods, 1995, 60 (1-2) 23-37
Language: English

A computer **-controlled maze environment for** testing **visual** memory **in the** rat

A **computer** -controlled version of a Y-maze was developed to allow automated **testing** of **rats** ' **learning** and **memory** with visual stimuli. Each of the 3 arms terminated with 2 adjacent monochromatic screens, 43...

... confined to the central part of the display). They could be stationary or have oscillatory **movement** . Subjects' location in the maze was **monitored** by **infrared** beam photodetectors ; approach to correct patterns was rewarded with **food** . Pigmented **rats** of the Hooded Lister and Dark Agouti strains were **tested** . All could acquire 2-pair concurrent visual discriminations comprising 2 positive and 2 negative patterns, either Scenes or Objects ; most could acquire 4-pair discriminations. Dark Agouti **rats** generally performed better than Hooded Listers. A novel training procedure using one positive and many negative patterns resulted in rapid **learning** of novel discriminations with either moving or non-moving patterns. The apparatus is an effective environment for visual **learning** by **rats** , suitable for a wide range of tasks in neuropsychology and psychopharmacology.

English Descriptors: Instrumentation; **Memory** ; Vision; **Computer** aid; **Learning** ; Discrimination task; Visual stimulus; **Animal** ; **Rat**

French Descriptors: Appareillage; Memoire; Vision; Assistance ordinateur; Apprentissage; Tache discrimination; Stimulus visuel; **Animal** ; **Rat** ; Labyrinthe

Spanish Descriptors: Instrumentacion; Memoria; Vision; Asistencia ordenador ; Aprendizaje; Tarea discriminatoria; Estimulo visual; **Animal** ; Rata

Influence of anterior subdiaphragmatic vagotomy and TPN on rat   feeding behavior .

Yang Z J; Ratto C; Gleason J R; Bellantone R; Crucitti F; Meguid M M
Department of Surgery, University Hospital, SUNY Health Science Center, Syracuse 13210.

Total parenteral nutrition (TPN) inhibits **food** intake and **feeding behavior** . Whether caloric **sensory** function of the liver contributes to this **food** intake and **feeding behavior** regulation via vagal-afferent innervation was **tested** after performing anterior hepatic vagotomy or sham operation in **rats** infused with a TPN solution providing 100% of daily energy needs, given continuously for 4 days. **Food** intake, **meal** number, size, duration, **meal** and intermeal sniffs, and eating activity were **measured** using an automated **computerized** **rat** eater meter (ACREM). TPN infusion resulted in a significant decrease of **food** intake and **feeding** indexes in both groups. The vagotomized **rats** showed a significantly higher **food** consumption, achieved by greater **meal** frequency, larger **meal** size, and longer **meal** duration. Thus, vagotomized **rats** consumed more than their controls by eating larger **meals** more often and of longer duration. Data suggest that anterior hepatic vagotomy interrupts hepatic caloric **sensory feedback** loop, diminishing inhibitory vagal effects on **food** intake with TPN, leading to an overall increase in **food** intake.

Descriptors: ***Appetite** --physiology--PH; * **Feeding Behavior** --physiology--PH; *Hypothalamic Area, Lateral--physiology--PH; *Liver --innervation--(IR); *Neural Inhibition--physiology--PH; *Parenteral Nutrition, Total; *Vagus Nerve--physiology--PH; *Ventromedial Hypothalamic Nucleus--physiology...
; Afferent Pathways--physiology--PH; **Animals ; Appetitive Behavior** **--physio** logy--PH; Brain Mapping; Energy Intake--physiology--PH; Energy Metabolism--physiology--PH; Hunger--physiology--PH; **Rats ; Rats, Inbred F344** ; Vagotomy

INFRARED

08503104   PMID: 2633788
   An automated system **for** detection **and** analysis **of locomotor** behavior **in crustaceans.**
   Fernandez de Miguel F; Cohen J; Zamora L; Arechiga H
   Boletin de estudios medicos y biologicos (MEXICO)   Jul-Dec 1989, 37 (3-4) p71-6, ISSN 0067-9666   Journal Code: 0136501
   Document type: Journal Article
   Languages: ENGLISH
   Main Citation Owner: NLM
   Record type: Completed

   An automated system **for** detection **and** analysis **of locomotor** behavior **in crustaceans.**
   An efficient and simple **system** is presented for the **analysis** of crustacean locomotor **behavior** . The **system** is composed by six dual-compartment actographic chambers with photocoupling circuits for **movement detection** , and a device for acquisition and **analysis** of data. Such device is made by a digital interface which **feeds** into a **microcomputer** with disc unit and printer. Information is **processed** in real time during the **experiment** , with a simultaneous printout and storage in a floppy disc.
   ; **Animals** ; **Infrared Rays** ; **Microcomputers** ; Photometry --instrumentation--IS; Transistors

06815961   PMID: 3998660
   An infrared system **for the** detection **of a pigeon's pecks at
alphanumeric characters on a TV screen: the dependency of letter** detection
on the predictability of one letter by another.
   Clauson H D; Izatt E J; Shimp C P
   Journal of the experimental analysis of behavior (UNITED STATES)   Mar
1985, 43 (2) p257-64, ISSN 0022-5002   Journal Code: 0203727
   Document type: Journal Article
   Languages: ENGLISH
   Main Citation Owner: NLM
   Record type: Completed

   An infrared system **for the** detection **of a pigeon's pecks at
alphanumeric characters on a TV screen: the dependency of letter** detection
on the predictability of one letter by another.
   Three pigeons pecked at letters of the alphabet and at the symbol "?"
displayed on a **computer** -driven cathode ray screen. A 4 by 4 matrix of
infrared emitting and **detecting** diodes and associated circuitry
identified the location of a pigeon's responses to the screen. Responses at
the target letter T were probabilistically reinforced with **food** whenever
T appeared in a string of three letters in the middle of the screen...
   ; **Animals** ; Cognition; Conditioning, Operant; Discrimination **Learning** ;
Pigeons; Probability

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S5    11263700    LABRAT? OR MAMMAL OR MAMMALS
S6          90    (NOCTURN? OR NIGHT?)(3N)(CREATUR? OR BEAST?)
S7     1436083    IR OR INFRARED?
S8          34    IC=(G06F? OR G01N? OR G01K? OR G09B? OR A01K? OR G01V?)
S9        1916    S1:S2 AND S3:S8
S10         31    S9 AND S7
S11         29    RD (unique items)
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           (c) 2005 The Gale Group
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           (c) 2005 British Education Index
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           (c) 2004 The HW Wilson Co
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           (c) 2004 INIST/CNRS
File  155:MEDLINE(R) 1951-2005/Dec W4
           (c) format only 2005 The Dialog Corp.
File  434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
           (c) 1998 Inst for Sci Info
File  437:Education Abstracts 1983-2004/Nov
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File 473:FINANCIAL TIMES ABSTRACTS 1998-2001/APR 02
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          (c) 2005 The New York Times
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          .(c) 2005 ACFCI & Chambre CommInd Paris
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
          (c) 2002 The Gale Group
?

09870373   PMID: 8221152
**Food   consistency   modulates   eating   volume   and · speed   through   brain
histamine in rat .**
   Fujise T; Yoshimatsu H; **Kurokawa M** ; Fukagawa K; Nakata M; Sakata T
   Department   of   Pediatric   Dentistry,   Faculty   of   Dentistry,   Kyushu
University 61, Fukuoka, Japan.
   Brain   research   bulletin (UNITED STATES)   1993,   32   (5)   p555-9,   ISSN
·0361-9230   Journal Code: 7605818
   Document type: Journal Article
   Languages: ENGLISH
   Main Citation Owner: NLM
   Record type: Completed

   **Food   consistency   modulates   eating   volume   and   speed   through   brain
histamine in rat .**
   Fujise T; Yoshimatsu H; **Kurokawa M** ; Fukagawa K; Nakata M; Sakata T
   Changes   in   meal   parameters   of   **rats**   fed with   different   consistency of
food   were examined using hard and soft pellets. Meal size and eating speed
of the   first meal after 1800 h increased significantly in **rats**   fed with
soft pellets compared to those fed with hard pellets. Effects of histamine
depletion...
... kg alpha-fluoromethylhistidine (FMH), a specific suicide inhibitor of
the histamine. synthesizing decarboxylase enzyme. When **rats** were fed with
hard   pellets,   FMH significantly decreased eating speed and prolonged meal
duration   without   affecting   meal   size.   When   **rats**   were fed with soft
pellets, FMH increased meal size and duration, but not eating speed...

... decreased and meal size and duration were increased in obese Zuckers, a
hereditary   histamine-depleted   **animal**   model, when compared to their lean
littermates. These results indicate that proprioceptive sensation from the
...
   ;   **Animals**   ; Mouth--innervation--   **IR** ; Obesity--physiopathology--PP;
 Rats ; **Rats, Wistar** ; **Rats** , Zucker
? pause
?

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Set      Items    Description
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S4      833020    RAT OR RATS OR MOUSE OR MICE
S5      107889    LABRAT? OR MAMMAL OR MAMMALS
S6        3617    (NOCTURN? OR NIGHT?)(3N)(CREATUR? OR BEAST?)
S7      641262    IR OR INFRARED?
S8           0    IC=(G06F? OR G01N? OR G01K? OR G09B? OR A01K? OR G01V?)
S9          13    S1:S2 AND S3:S8
S10          0    S9 AND S7
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S12         11    RD (unique items)
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File    9:Business & Industry(R)  Jul/1994-2005/Jan 10
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                (c) 2005 The Gale Group
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                (c) 1999 Bridge
File 810:Business Wire 1986-1999/Feb 28
                (c) 1999 Business Wire
File 813:PR Newswire 1987-1999/Apr 30
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(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2003/0150395 A1**

Mauderli et al. (43) Pub. Date: **Aug. 14, 2003**

(54) **APPARATUS AND METHODS FOR TESTING PAIN SENSITIVITY**

(76) Inventors: **Andre Paul Mauderli**, Dunnellon, FL (US); **Charles J. Vierck**, Gainesville, FL (US)

Correspondence Address:
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A PROFESSIONAL ASSOCIATION
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GAINESVILLE, FL 326066669

(57) **ABSTRACT**

The subject invention concerns an apparatus for testing pain sensitivity in an animal. The apparatus can be used to evaluate pain sensitivity in response to a disease state, drug, surgical procedure, or other intervention. The subject invention also pertains to methods for testing pain sensitivity in an animal, using the apparatus. The apparatus of the subject invention can be automated and used in conjunction with software for control of experimental conditions, response measurements, and data analysis.

(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2002/0177110 A1**

Kurokawa (43) **Pub. Date:** **Nov. 28, 2002**

(54) **METHOD AND SYSTEM FOR MEASURING MEMORY AND LEARNING CAPABILITIES**

(76) Inventor: Mamoru Kurokawa, Nagasaki (JP)

Correspondence Address:
ANTONELLI TERRY STOUT AND KRAUS
SUITE 1800
1300 NORTH SEVENTEENTH STREET
ARLINGTON, VA 22209

(57) **ABSTRACT**

A system for measuring memory and learning capabilities of a small animal, according to the present invention, includes:

a feed holder storing therein feed to be given to the small animal;

an observation field having a plurality of through holes opened into the feed holder, and holding the small animal therein;

an openable cover for opening and closing the respective through holes, the cover having breathability;

a dark chamber joined to the observation field;

an observation unit for measuring a position of the small animal in the observation field successively by using infrared rays; and

a computer for controlling timing of opening and closing each openable cover, and calculating the number of accessing times during each unit period, of the small animal to the through holes on the basis of an output from the observation unit.
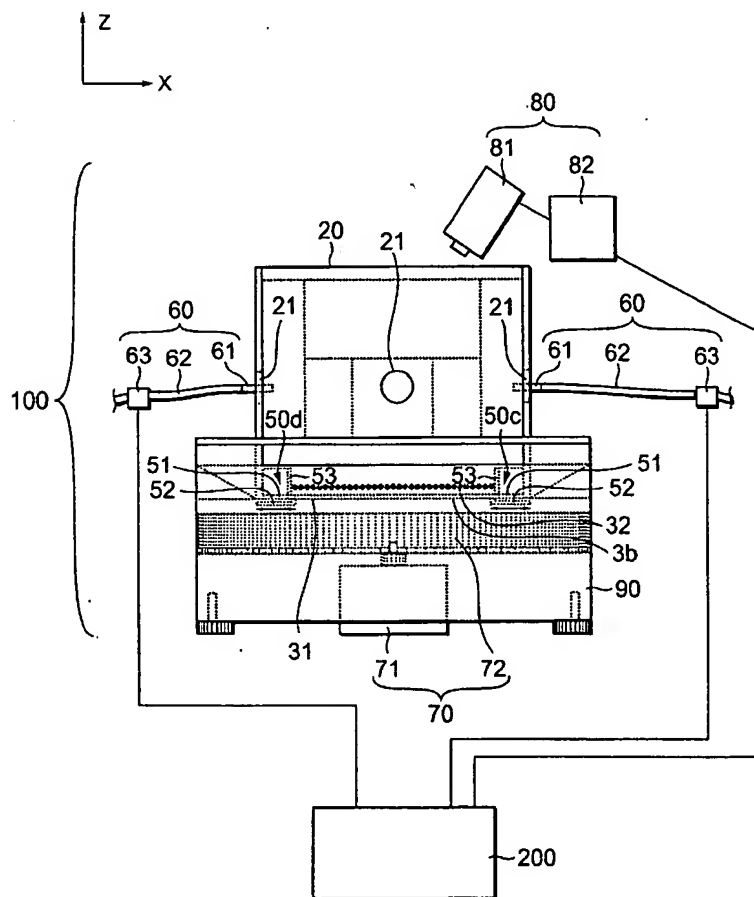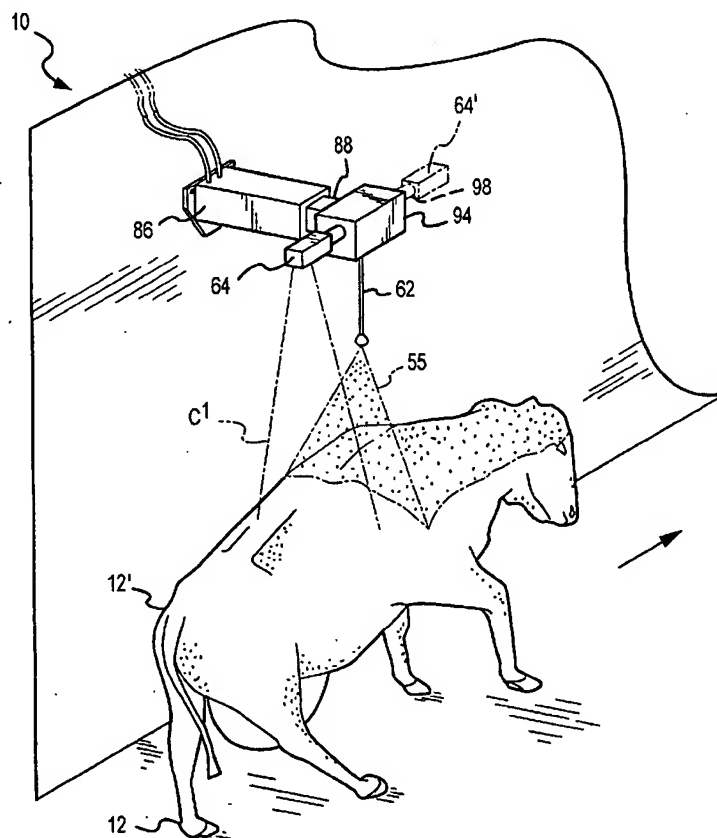
(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: US 2001/0010208 A1

Greeson (43) Pub. Date: Aug. 2, 2001

(54) **APPARATUS FOR VARIABLY DISCHARGING INGREDIENTS ON AN ANIMAL**

(76) Inventor: John S. Greeson, Dexter, NM (US)

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(21) Appl. No.: 09/810,904

(22) Filed: Mar. 15, 2001

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/342,046, filed on Jun. 23, 1999, now Pat. No. 6,230,660.

Publication Classification

(51) Int. Cl.^{7} A01K 29/00

(52) U.S. Cl. 119/665

(57) **ABSTRACT**

An apparatus and method for variably discharging one or more ingredients on an animal is provided. Water is not included as an ingredient. The ingredients are discharged through a nozzle operatively connected to a valve. The animal is detected by a either an ultrasonic sensor, a. diffused deflective infrared sensor, or single sensing probe sensor. A variety of structural members for selectively positioning the apparatus in relation to the animal are included. A controller is provided that is programmable for varying the discharge on the animal from a continuous application to a variety of interrupted sequences. The apparatus includes a timer assembly for scheduling applications on a daily, weekly, or even monthly basis.

(12) **United States Patent**
Bonner et al.

(10) **Patent No.:** **US 6,810,833 B2**
(45) **Date of Patent:** **Nov. 2, 2004**

(54) **ANIMAL HABITAT AND DISPLAY SYSTEM**

(75) Inventors: **Ronald K. Bonner**, Villa Park, CA (US); **Eric R. Knudsen**, Riverside, CA (US)

(73) Assignee: **North American Pet Products**, Corona, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/352,617**

(22) Filed: **Jan. 28, 2003**

(65) **Prior Publication Data**

US 2004/0144328 A1 Jul. 29, 2004

(51) Int. Cl.[7] A01K 31/06
(52) U.S. Cl. 119/455; 119/452
(58) Field of Search 119/455, 452, 119/417, 418, 248, 245, 253; 230/23.83, 23.87–23.89

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Primary Examiner—Michael Carone
Assistant Examiner—Kimberly S. Smith
(74) Attorney, Agent, or Firm—Fulwider Patton Lee Lee & Utecht, LLP

(57) **ABSTRACT**

An animal habitat and display system provided in a frame having at least one set of guide rails supporting a pull-out drawer having at least one compartment with a viewing window and a movable wall section for gaining access into the compartment which defines an internal habitat environment. A selectively operable regulator element in communication with the internal environment is selectively operable via an environmental control unit having a control panel for regulating the internal habitat environment.

46 Claims, 10 Drawing Sheets
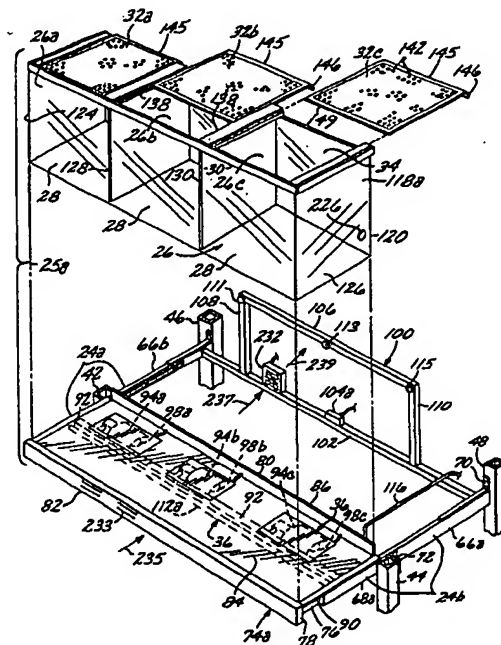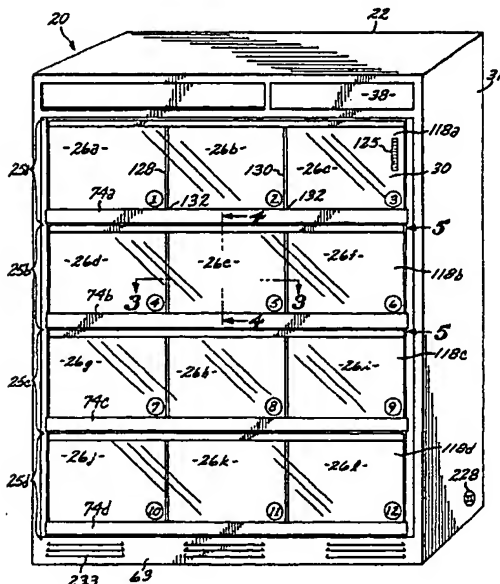
(54) **APPARATUS FOR VARIABLY DISCHARGING INGREDIENTS ON AN ANIMAL**

(76) Inventor: **John S. Greeson**, 320 E. Cheyenne Rd., Dexter, NM (US) 88230

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/810,904**

(22) Filed: **Mar. 15, 2001**

(65) **Prior Publication Data**

US 2001/0010208 A1 Aug. 2, 2001

(51) Int. Cl.[7] **A01K 13/00**

(52) U.S. Cl. **119/665**; 119/656; 119/658; 119/667

(58) Field of Search 119/665, 656, 119/658, 666, 667, 668, 669

(56) **References Cited**

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Primary Examiner—Yvonne Abbott

(74) *Attorney, Agent, or Firm*—Ray R. Regan

(57) **ABSTRACT**

An apparatus and method for variably discharging one or more ingredients other than water on an animal. A nozzle operatively connected to a valve discharges the ingredients. The animal is detected by a either an ultrasonic sensor, a diffused deflective infrared sensor, or single sensing probe sensor. A variety of structural members selectively position the apparatus in relation to the animal. A programmable controller varies the discharge of ingredients on the animal from a continuous application to a variety of interrupted sequences. A timer assembly schedules applications of ingredients on a daily, weekly, or even monthly basis.

29 Claims, 6 Drawing Sheets
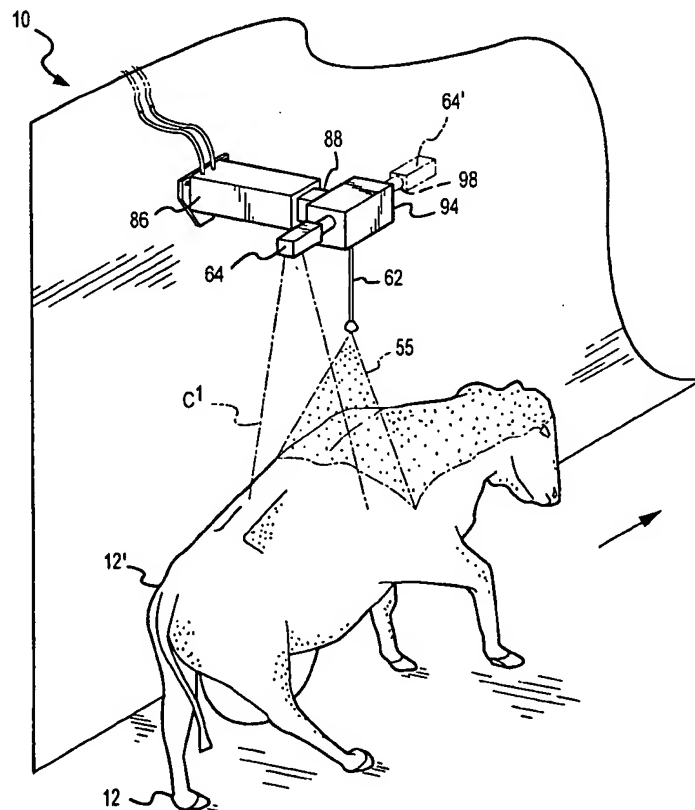
(12) **United States Patent**
Mauderli et al.

(10) Patent No.: **US 6,644,244 B2**
(45) Date of Patent: **Nov. 11, 2003**

(54) **APPARATUS AND METHODS FOR TESTING PAIN SENSITIVITY**

(75) Inventors: **Andre Paul Mauderli**, Dunnellon, FL (US); **Charles J. Vierck**, Gainesville, FL (US)

(73) Assignee: **University of Florida**, Gainesville, FL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 102 days.

(21) Appl. No.: **10/004,662**

(22) Filed: **Dec. 5, 2001**

(65) **Prior Publication Data**

US 2003/0105412 A1 Jun. 5, 2003

(51) Int. Cl.[7] A01K 29/00
(52) U.S. Cl. 119/417; 119/421
(58) Field of Search 119/417, 418, 119/421, 712, 719, 720, 721

(56) **References Cited**

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*Primary Examiner*—Yvonne Abbott
(74) *Attorney, Agent, or Firm*—Saliwanchik, Lloyd & Saliwanchik

(57) **ABSTRACT**

The subject invention concerns an apparatus for testing pain sensitivity in an animal. The apparatus can be used to evaluate pain sensitivity in response to a disease state, drug, surgical procedure, or other intervention. The subject invention also pertains to methods for testing pain sensitivity in an animal, using the apparatus. The apparatus of the subject invention can be automated and used in conjunction with software for control of experimental conditions, response measurements, and data analysis.

39 Claims, 2 Drawing Sheets
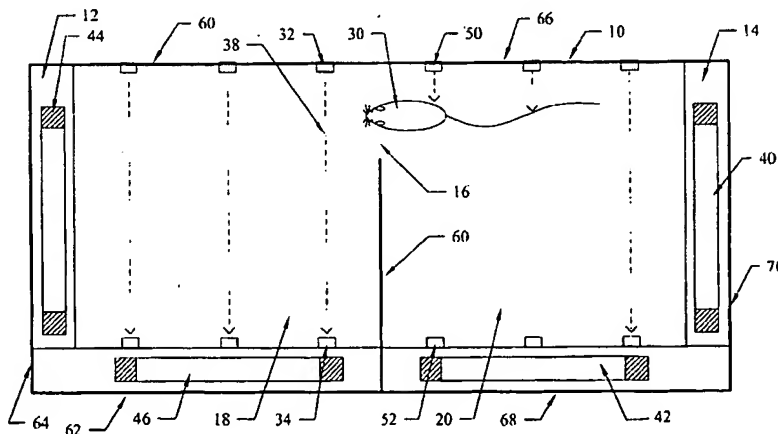
(54) **APPARATUS AND METHODS FOR TESTING PAIN SENSITIVITY**

(75) Inventors: **Andre Paul Mauderli**, Dunnellon, FL (US); **Charles J. Vierck**, Gainesville, FL (US)

(73) Assignee: **Unversity of Florida**, Gainesville, FL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/313,636**

(22) Filed: **Dec. 5, 2002**

(65)   **Prior Publication Data**

US 2003/0150395 A1 Aug. 14, 2003

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/004,662, filed on Dec. 5, 2001.

(51) **Int. Cl.**[7] **A01K 29/00**
(52) **U.S. Cl.** **119/417; 119/421**
(58) **Field of Search** 119/417, 418, 119/421, 712, 719, 720, 721

(56)   **References Cited**

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5,608,209 A	*	3/1997	Matsuda	250/221
5,721,207 A	*	2/1998	Noble et al.	514/9
5,915,332 A	*	6/1999	Young et al.	119/421
6,062,224 A	*	5/2000	Kissinger et al.	128/897
6,223,690 B1	*	5/2001	Park	119/248
6,273,026 B1	*	8/2001	Ferster et al.	119/421
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Cleary, A. *Instrumentation for Psychology* [1977] pp. 131–222.

D'Amour, F.E. and D. Smith "A method for determining loss of pain sensation" *J Pharmacol Exp Ther* [1941] 72:74–79.

Dubner, R. "Methods of assessing pain in animals" *Textbook of Pain* [1989], pp. 247–256.

Dubuisson, D and S.G. Dennis "The formalin test: a quantitative study of the analgesic effects of morphine, meperidine, and brain stem. stimulation in rats and cats" *Pain* [1977] 4:161–174.

Hargreaves, K et al. "A new and sensitive method for measuring thermal nociception in cutaneous hyperalgesia" *Pain* [1988] 32:77–88.
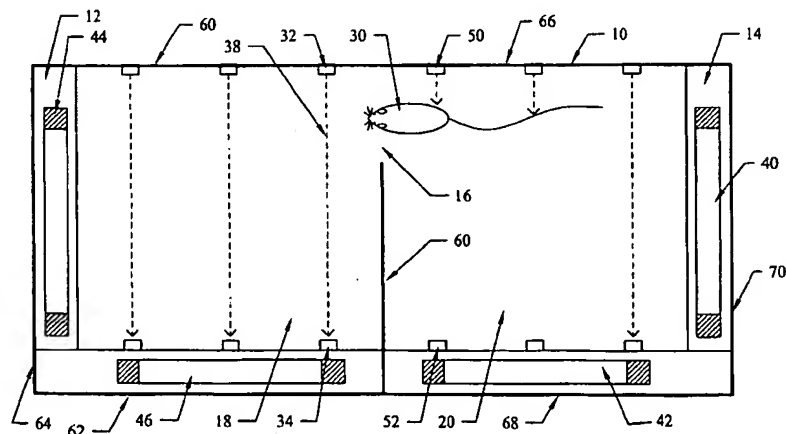
Primary Examiner—Yvonne Abbott
(74) *Attorney, Agent, or Firm*—Saliwanchik, Lloyd & Saliwanchik

(57)   **ABSTRACT**

The subject invention concerns an apparatus for testing pain sensitivity in an animal. The apparatus can be used to evaluate pain sensitivity in response to a disease state, drug, surgical procedure, or other intervention. The subject invention also pertains to methods for testing pain sensitivity in an animal, using the apparatus. The apparatus of the subject invention can be automated and used in conjunction with software for control of experimental conditions, response measurements, and data analysis.

82 Claims, 2 Drawing Sheets

United States Patent [19]

Wilson et al.

[54] **CONTROL SYSTEM FOR ACCESSORIES USED WITH SMALL ANIMALS AND PETS**

[75] Inventors: C. Carl Wilson, 2807 Illinois La., Manhattan, Kans. 66502; Kevin D. Dutton, Morton, Ill.

[73] Assignee: C. Carl Wilson, Manhattan, Kans.

[21] Appl. No.: 598,468

[22] Filed: Oct. 15, 1990

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 368,576, Jun. 20, 1989, abandoned.

[51] Int. Cl.^{5} A01K 1/00
[52] U.S. Cl. 119/163; 119/51.14
[58] Field of Search 119/1, 51.02, 51.14, 119/55, 163, 164

[56] **References Cited**

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Primary Examiner—Paul J. Hirsch
Attorney, Agent, or Firm—John O. Mingle

[57] **ABSTRACT**

A control system for accessories used with small animals and pets comprises an accessory module, such as a pet flush toilet, small animals feeder, or small animals trainer, coupled with a detector systems that senses the presence of said small animal or pet at the needed location and transmits appropriate signals to a logic control segment designed for the particular accessory module employed. Such detectors do not physically restrict small animals or pets and can be passive infrared or proximity in their principles of operation. The preferred embodiment is demonstrated by controlling an accessory module comprising a pet flush toilet system with a delay-reset logic control.

11 Claims, 2 Drawing Sheets
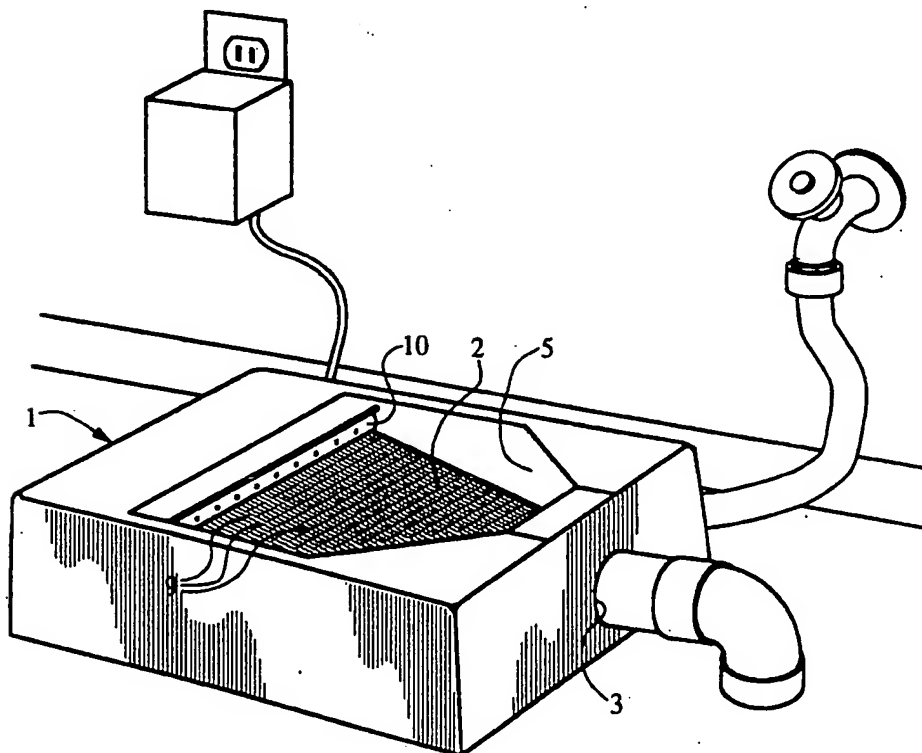
[54] **CAGE FOR EXPERIMENTAL ANIMALS**

[75] Inventor: Kazuhito Sakano, Toyama, Japan

[73] Assignee: Toyo Sangyo Kabushiki Kaisha, Toyama, Japan

[21] Appl. No.: 411,550

[22] Filed: Sep. 22, 1989

[30] **Foreign Application Priority Data**

Sep. 25, 1987 [JP] Japan 62-241517

[51] Int. Cl.^{5} A01K 1/00
[52] U.S. Cl. 119/15; 119/174
[58] Field of Search 119/1, 15, 17, 19

[56] **References Cited**

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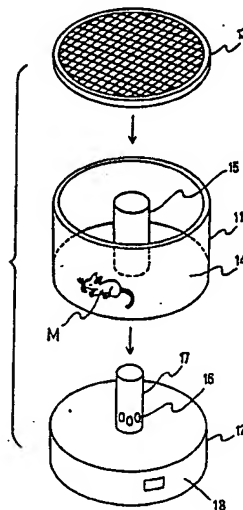226752 9/1985 Poland 119/15

Primary Examiner—John Weiss
Attorney, Agent, or Firm—Flynn, Thiel, Boutell & Tanis

[57] **ABSTRACT**

A cage of experimental animals comprises a body, a position detection part to be assembled with the body and a cover for covering the body. The body has a cylindrical cover projected from a bottom thereof, a keeping space defined between a side wall of the body and the cylindrical cover for keeping experimental animals. The position detection part has a position detector at the circumferential surface thereof for detecting the behavioral movement of the animal.

9 Claims, 2 Drawing Sheets

United States Patent [19]

Catsimpoolas

[11] **4,448,150**

[45] **May 15, 1984**

[54] **ANIMAL HOUSING AND ACTIVITY MONITOR**

[75] Inventor: Nicholas Catsimpoolas, Newton Center, Mass.

[73] Assignee: Trustees of Boston University, Boston, Mass.

[21] Appl. No.: **418,555**

[22] Filed: **Sep. 15, 1982**

[51] Int. Cl.^{3} A01K 1/03; A01K 45/00
[52] U.S. Cl. **119/1;** 119/15; 119/17; 119/18; 250/221; 250/225
[58] Field of Search 119/1, 15, 17, 18, 29, 119/16; 340/825.31, 573, 556, 686; 350/221, 227, 225; 356/375

[56] **References Cited**

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Advertisement, Direct Mail, 2 pages, Columbus Instruments International Corporation, 950 N. Hague Ave., Columbus, Ohio 43204.

Primary Examiner—Gene Mancene
Assistant Examiner—Kris R. Schulze
Attorney, Agent, or Firm—Hamilton, Brook, Smith & Reynolds

[57] **ABSTRACT**

An animal activity housing and monitor includes several vertically displaced levels of animal cages 32 which are angularly disposed about a core 28. The core is mounted for rotation relative to the animal cages and for fiberoptic communication with the cages. The fiberoptic filaments provide for at least one light beam to be sequentially transmitted across the cages within each level for detecting animal position. Surrounding the central core are animal activity stations 36 which may be used for animal weighing, feeding, or experimentation. The cage support structure 24 is mounted for rotational positioning so that cages may be positioned at animal activity stations 36.

24 Claims, 9 Drawing Figures